

0590
0528

#5



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OIPE

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/995,917A

DATE: 05/09/2002

TIME: 12:53:05

Input Set : A:\salk45.txt

Output Set: N:\CRF3\05092002\I995917A.raw

4 <110> APPLICANT: WANG
 6 <120> TITLE OF INVENTION: DAS5, A P450 PROTEIN INVOLVED IN THE
 7 BRASSINOSTERIOD BIOSYNTHESIS PATHWAY IN PLANTS
 10 <130> FILE REFERENCE: SALKINS.045A
 C--> 12 <140> CURRENT APPLICATION NUMBER: US/09/995,917A
 C--> 12 <141> CURRENT FILING DATE: 2001-11-27
 12 <160> NUMBER OF SEQ ID NOS: 3
 14 <170> SOFTWARE: FastSEQ for Windows Version 4.0
 16 <210> SEQ ID NO: 1
 17 <211> LENGTH: 382
 18 <212> TYPE: PRT
 19 <213> ORGANISM: DAS5
 21 <400> SEQUENCE: 1
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 23 1 5 10 15
 24 Arg Ser Asp Ser Ile Gly Thr Phe Leu Gln Gln Arg Val Ser Arg Tyr
 25 20 25 30
 26 Gly Lys Val Phe Lys Ser Asn Ile Cys Gly Gly Lys Ala Val Val Ser
 27 35 40 45
 28 Cys Asp Gln Glu Leu Asn Met Phe Ile Leu Gln Asn Glu Gly Lys Leu
 29 50 55 60
 30 Phe Thr Ser Asp Tyr Pro Lys Ala Met His Asp Ile Leu Gly Lys Tyr
 31 65 70 75 80
 32 Ser Leu Leu Leu Ala Thr Gly Glu Ile His Arg Lys Leu Lys Asn Val
 33 85 90 95
 34 Ile Ile Ser Phe Ile Asn Leu Thr Lys Ser Lys Pro Asp Phe Leu His
 35 100 105 110
 36 Cys Ala Glu Asn Leu Ser Ile Ser Ile Leu Lys Ser Trp Lys Asn Cys
 37 115 120 125
 38 Arg Glu Val Glu Phe His Lys Lys Glu Val Lys Met Phe Thr Leu Ser Val
 39 130 135 140
 40 Met Val Asn Gln Leu Leu Ser Ile Lys Pro Glu Asp Pro Ala Arg Leu
 41 145 150 155 160
 42 Tyr Val Leu Gln Asp Phe Leu Ser Tyr Met Lys Gly Phe Ile Ser Leu
 43 165 170 175
 44 Pro Ile Pro Leu Pro Gly Thr Gly Tyr Thr Asn Ala Ile Lys Val Arg
 45 180 185 190
 46 Ser Asn Arg Asn Ile His Gln Asn Ala Ile Ile Glu Asp Met Asn Asn
 47 195 200 205
 48 Ala Ile Arg Glu Glu Asp Phe Leu Asp Ser Ile Ile Ser Asn Glu Asp
 49 210 215 220
 50 Glu Glu His Ala Ala Ile Arg Ala Lys Lys Gly Asp Gly Glu Leu Leu
 51 225 230 235 240

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52 Asn Trp Glu Asp Tyr Gln Lys Met Glu Phe Thr Gln Cys Val Ile Ser
53                               245                               250                               255
54 Glu Ala Leu Arg Cys Gly Asn Ile Val Lys Thr Val His Arg Lys Ala
55                               260                               265                               270
56 Thr His Asp Ile Lys Phe Lys Glu Tyr Val Ile Pro Lys Gly Trp Lys
57                               275                               280                               285
58 Val Phe Pro Ile Phe Thr Ala Val His Leu Asp Pro Ser Leu His Glu
59                               290                               295                               300
60 Asn Pro Phe Glu Phe Asn Pro Met Arg Trp Thr Lys Thr Thr Ala Phe
61 305                               310                               315                               320
62 Gly Gly Gly Val Arg Val Cys Pro Gly Gly Glu Leu Gly Lys Leu Gln
63                               325                               330                               335
64 Ile Ala Phe Phe Leu His His Leu Val Leu Ser Tyr Arg Trp Lys Ile
65                               340                               345                               350
66 Lys Ser Asp Glu Met Pro Ile Ala His Pro Tyr Val Glu Phe Lys Arg
67                               355                               360                               365
68 Gly Met Leu Leu Glu Ile Glu Pro Thr Lys Phe Leu Glu Asp
69                               370                               375                               380
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73 <211> LENGTH: 6508
74 <212> TYPE: DNA
75 <213> ORGANISM: DAS5
77 <400> SEQUENCE: 2
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80 aacattaaca tattattata tgttttttat attaaattta atatatctac aatattttca 180
81 aacatatcaa ttattttatt ttacaaatta tattattaaa tagttttatt atttttaaaa 240
82 ccataattaa acataattaa acattacttt acatataaaa tcataataaa aaattttataa 300
83 attaaatata aaattacata taaaaccatg ataacataaa ttaaatagaa aaaatatata 360
84 aattaaaccg aaattacata taaaaccatg ataacataaa tcaaagctaa ctatattatc 420
85 tattatggtt ttactcttca tttgatgatg caccaaactt ttgtcatata tgctcaacta 480
86 ggtcatcttt tagttgttg tgcatacttc tatcacgaag tcgaattcga ttgccgagaa 540
87 tgttgcaaaa taaaaataga aaatttttaa gttattatta tgtttaatgc ttaactaaca 600
88 ccaattaaat aatattcgta tataatttaa acatatacat gatgagagct tattatatag 660
89 ataatttaat tttatgaatt ttaaaagtaa aaataaaaaa aataacaaac atataaagta 720
90 ttttaattgat gttataaagt atagataatt ttattttata caaagaaaag aaattaataa 780
91 caagtgaca tatggaagag agagaaagtt tctccaagtt tctcatttca gaaacgattc 840
92 tgagaaaaac tgattaaaaa attattttt tcatattttt gattttattt tatttgaggt 900
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97 gtgtcattta cgaagataga gagtttactt tgaaagaaca taaatttata ccaacaaact 1200
98 tattgcatga ggggtcccaa ttgcgtacac gtgcgtcaat ttttcatcat ttagtttctt 1260
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101 tctcttaaaa aaatgtttac acgaagtatt tagattttcc tttgttattt tactagctag 1440
102 ttaacatga aatcatttga gaggacaaga atatatataa aacattattt tattctcagt 1500
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105 acataaataa taataataat aataataata ataataataa taataataat aataataata 1680
106 ataaaaataa taatgttttg cataccgccg ttttaccatt ttgattgtca attctaaata 1740
107 tattgtttatc ttttatagtt attttttatt attaaaaaaa tgtgtactgt ttatgtcaat 1800
108 agtagaatta gacaaagtat gtgcaatctt tttcgcataa ttcctatttt attagcaaac 1860
109 ggtaaaaaaa ataaaaataa aacaagtaaa acatttgtca tagtctagtt attaattata 1920
110 gtgaaatcat atgattatgt aataatcatg tttttaataa ctaataagac tataatggata 1980
111 tcataagcag atacaagttt tagcttggtt tatacatgct taattaatta ttttttcata 2040
112 tcttaagata atttgaaata gcttatatat gatattgtta aatttaatat ctaatccaat 2100
113 agtactggat ttttaattat atatatatat atatatTTTT aaataattat taaacattaa 2160
114 taattagata tgttaaattc tagaagaata aattacatgt tatcatattg ggagaatagt 2220
115 catatTTTcca ttgttatcac tgatttgatt ccaagtgtgt agtatgagag atttctgtag 2280
116 gatgcaacaa tatactTTTct ttttatttac actaaaatat tatctaaatc aacaataaga 2340
117 atgattatat aaagattatt ttttctgtta tacataagaa aagagttggt ggtttctctt 2400
118 ttttgtctct acacaattag gaatgttccc ctatagtata gtatatattt tactttcgtg 2460
119 gatcttctta gatatactac ctttaatttg gttgtttgtg agtgtgagtg ttagtgtaag 2520
120 tgtggtgtgg tgtgtgtatg tgtatgtgta tatatatata tatatagaga gagaggata 2580
121 tagatagacc aagaagaaaa catcataata gatactcaat tatcaataaa aggatcttaa 2640
122 tctaattcaa agacaatgct ggtcttatcc atcttcttgt cgtaggatt gttctttctc 2700
123 tctatTTTga ttctttatat ttcaatttct aagaaaaatg aaacaaacga tcatcactca 2760
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127 ttagcaacaa caaaaaaact gtgtagacaa caatatacac ccttcatggg aactcagttt 3000
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130 aagaaaaaag taatgttcac agtactacag aagattcata tctgattttt ttgcatacat 3180
131 gacaatttga ttgcctacca atgtttttat gattttattt tgtaaateca atttatatac 3240
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154 taaacccatc ccatcatttt attttatttt tgctattttt ttcgcaaatt tgttttggtg 4620
155 cgtagccaag tttttttctg atcatatggt gatactactt taaaatcata tagaacatgt 4680
156 tcaattatat catgaaattt actggacgga atttgcaggt gatttctgag gcactacgat 4740
157 gtggtaatat cgtcaagact gtacatagaa aagctactca tgatattaaa ttcaaagggt 4800
158 aacaaaaatg tcaatcattt tttttttgat caaaaaatgt caatcaaatt ttactaatta 4860
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161 atccttttga atttaatccc atgagatgga ccgtaagtaa attatttaga aacagataac 5040
162 attcaaattg gttttttttt tttttttttt tttttttttt tttggcaaaa ataacattca 5100
163 aatggtaagc aaagaaaaaa aacggaaata ttgtgaaact aattttgggt tttaaattaa 5160
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165 tcctgggtgt gaacttggca agctccaaat tgctttcttc cttcatcatc ttgtcctctc 5280
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184 ctttcttctc cacaatctct ctaagtcttc ggatcttaac totaacccta atctctctcc 6420
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193 <400> SEQUENCE: 3

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196 tgtggtggaa aagcagtagt ctcatgtgac caagaactca acatgttcat acttcaaaac 180
197 gaaggggaagt tgtttacatc ggattatcca aaagcgatgc atgacattct cggcaaatat 240
198 tcccttctat tagccaccgg agaaattcac aggaactaa aaaatgttat tattagcttc 300
199 atcaatctca caaagtogaa acctgacttt ctactgog cagagaacct ctctatctcg 360
200 atactaaagt catggaaaaa ttgcccagaa gtgcgaattcc ataaagaagt taaaatgttt 420
201 actctcagtg ttatggtaaa ccaactcttg agcatcaagc cagaagaccc agcaagactt 480
202 tatgtattgc aagatttttt atcttatatg aaagggttta tctccttacc aataaccgctt 540
203 ccaggaaagg gttatacaaa cgcaattaa gttagatcca atcgtaatat acatcaaaac 600

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206 aattgggaag attatcagaa gatggaattc actcaatgtg tgatttctga ggcactacga 780
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212 cacccttacg tggagtttaa gagaggcatg cttttggaga tagagccaac aaaattcctt 1140
213 gaagattag                                     1149
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VERIFICATION SUMMARY

DATE: 05/09/2002

PATENT APPLICATION: US/09/995,917A

TIME: 12:53:06

Input Set : A:\salk45.txt

Output Set: N:\CRF3\05092002\I995917A.raw

L:12 M:270 C: Current Application Number differs, Replaced Current Application No

L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date